

Report 28

Current standards of energy management – 1993 Workshops feedback



Energy Efficiency Office
DEPARTMENT OF THE ENVIRONMENT

“ This analysis provides a unique, detailed and remarkably consistent picture of the state of energy management in the UK ”

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General Information Report

WORKSHOPS FEEDBACK

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WORKSHOPS FEEDBACK

In January 1993, BRECSU, on behalf of the DOE's Energy Efficiency Office, launched two new, pioneering publications on 'Organisational Aspects of Energy management', General Information Report 12 - Organisational Aspects of Energy Management and General Information Report 13 - Reviewing Energy Management.

These publications provide guidance to anyone wishing to establish or review energy management activities in their organisation. A key theme is that energy is a management concern. Any review of energy management practices must make a formal assessment of the following organisational aspects:

- Energy Policy: why an organisation needs a formal commitment to energy management
- Organising: how is energy management integrated into the formal and informal management structures
- Motivation: how do we build effective relationships with energy users and motivate them to save energy
- Information Systems: what is an appropriate and effective energy management system
- Marketing: where and how does the energy management function promote and publicise its activities and achievements
- Investment: how does the organisation identify projects and justify investment in increased energy efficiency.

The guidance introduced a powerful new tool for reviewing energy management performance - the Energy Management Matrix. The Matrix is a diagnostic tool in which the six key aspects of organisational management are measured against five levels of achievement (0-4). Level 4 represents current best practice.

This tool provides a simple way of establishing your current energy management profile and identifying where your practices are most advanced and where there is

Highlighted findings

The shapes of the profiles delegates drew on the Matrix indicate where their energy management is less advanced and where attention needs to be directed. This helps organisations focus their efforts to improve energy management.

Only one in ten organisations is operating at current best practice, while average performance, in both the private and public sectors, is only halfway up BRECSU's Energy Management Matrix.

The workshops have had a major impact in promoting improvement in energy management. Six months after the workshop, 78% of delegates said they had put an action into effect and most of these actions will result in energy savings.

Over half the delegates believe that there are savings of 10-20% in energy consumption to be made and a fifth think they could make savings of over 20%.

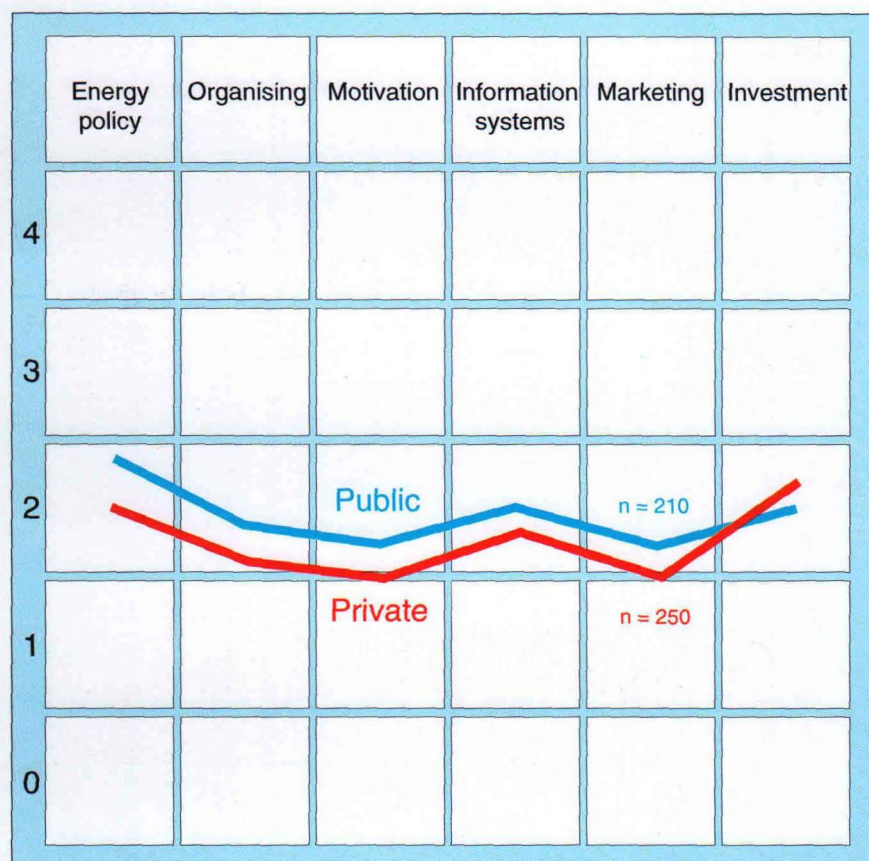


Figure 1

Profiles of private and public sector organisations show that there is room for improvement in energy management in the UK

potential for improvement. The Matrix is a proven tool which will help you to break down organisational barriers, identify opportunities for improvement, develop positive action plans and monitor the development of your energy management practices.

The guidance on the 'Organisational aspects of energy management' was introduced to the energy management community through a series of 12 regional workshops which were attended by nearly 500 delegates.

The information generated by these workshops, together with supplementary information from a follow-up questionnaire, has been analysed and this document summarises the main findings. These analyses:

- provide a unique, detailed, and remarkably consistent picture of the state of energy management in the UK
- show that a large proportion of delegates had success with the action they instigated as a result of attending the workshop.

Profiling the current state of energy management in the UK

By analysing the profiles drawn by nearly 500 delegates across the six key organisational aspects which make up the columns of BRECSU's Energy Management Matrix, it is possible to identify the current state of energy management in organisations attending the 1993 workshops.

This analysis shows that, two decades after the first 'energy crisis' and 12 years since the Armitage Norton report suggested approaches to managing energy were unbalanced, progress on the 'organisational aspects' of energy management in the UK remains patchy.

In both the private and public sectors, there is room for substantial improvement since average performance is only halfway up the Matrix towards current best practice (figure 1).

The averaged profiles for both sectors are remarkably similar, with the public sector slightly more advanced except in terms of investment. Neither sector, therefore, has a monopoly of good practice.

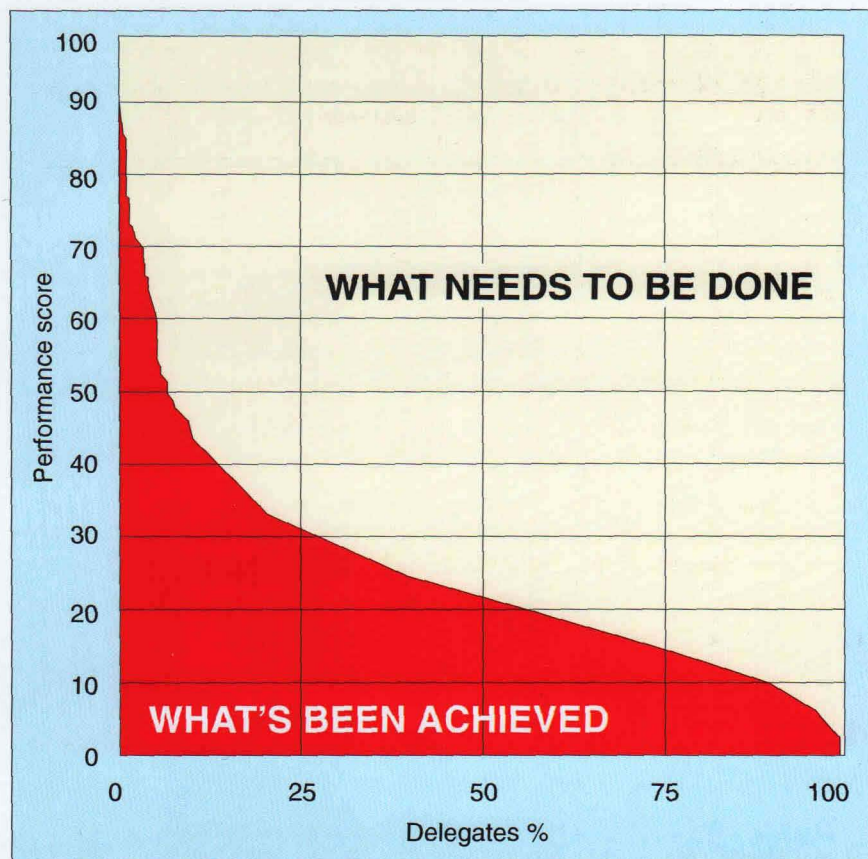


Figure 2

The red area indicates energy management performance; the yellow area shows how much needs to be done to achieve current best practice

Despite the flattening tendency introduced by averaging, the profile in both sectors is unbalanced, with a slight tendency towards a 'U' shape. This means that in both sectors more attention has been given to Energy policy and to Investment than the other four key organisational aspects. This is worrying because it puts energy management at risk. Expectations have been raised by adopting an energy policy and by investing in energy efficiency measures, but other aspects of energy management are underdeveloped, so this effort may be wasted.

The top 25% of organisations show less imbalance than the bottom 25%. As an organisation's approach to energy management improves and its profile moves up the Matrix, so its handling of the six key aspects becomes more balanced.

Conversely, the less developed an organisation's approach is, and the lower down the Matrix it is, then the more imbalanced the six organisational aspects are likely to be. Typically, poor performance involves imbalance, while moving up the Matrix means becoming more balanced.

Indexing UK performance

A single performance figure (ranging from 0 to 100) has been calculated for each profile by weighting its average height on the Matrix by its degree of imbalance. Measured in this way, the scores of many more delegates are below 50 than are above it. The mean is 26 and the median 22.

Graphing these scores as a cumulative frequency distribution (figure 2) gives an impression of energy management performance at the time of the workshops. The red area indicates the actual performance of organisations as judged by delegates at the time of the workshop; the yellow area shows how much needs to be done for all organisations to achieve perfect performance.

Visual inspection suggests that energy management in the UK is only about a quarter of the way towards current best practice, as defined by the Matrix.

Differences between organisations

About 10% of delegates came from organisations that are signatories to the EEO Making a Corporate Commitment campaign (MACC). Although the shape of the profiles they drew was very similar to the average, organisations that have signed MACC were consistently higher up the Matrix. However, MACC signatories tend to be large organisations with high energy spends and these perform consistently better than organisations with small energy bills.

Average 'public sector' profiles for Health, Local Authorities and Higher Education are fairly similar. The Health sector is slightly in advance of the other two sectors, but its profile is also the most imbalanced.

Average 'private sector' profiles for Utilities, Commerce and Industry are also similar. Although the Utilities sector is slightly higher in terms of policy commitment, other aspects of energy management are no further advanced than in the other two sectors. The marginally lower position of Industry may reflect the greater emphasis given by members of that sector to implementing technical, as opposed to organisational, solutions.

Categorising profile shapes

Because averaging the results obscures individual variation and produces a flattened profile, profiles were categorised into seven shapes (figure 3). One-third of delegates drew an 'imbalanced profile' (shape 7) while only 7% of delegates drew a 'high balanced' profile (shape 1).

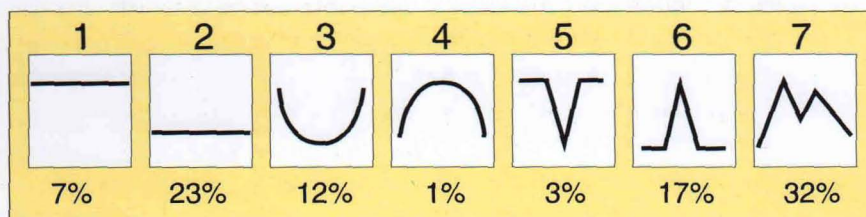
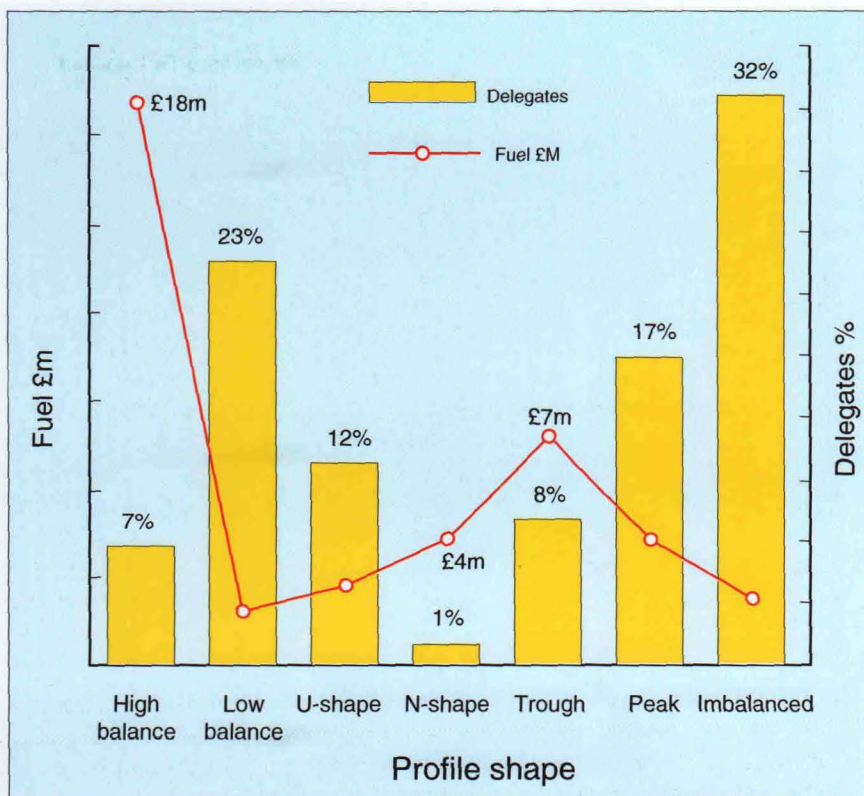


Figure 3
Energy management profiles have been categorised into seven basic shapes.

Figure 4

Average annual bills are plotted against profile shapes. There is a clear relationship between energy management performance and energy spend. In general, organisations with large energy bills are performing significantly better than those with smaller expenditure.



Profile shapes in the private and public sectors are very similar, with the exception that more delegates from the public sector drew a high balanced profile, while more private sector organisations drew an imbalanced profile.

Less than a third thought they were adopting a balanced approach (shapes 1 and 2). This means that the majority of organisations are wasting part of their effort because one or more key organisational aspects are dragging them back.

Profiles and energy spend

There is a clear relationship between the size of an organisation's fuel bill and the shape of its profile. Organisations with very large fuel bills have a more balanced approach to energy management and organisations with lower bills have lower and/or more unbalanced profiles (figure 4).

Although there were few delegates with high balanced profiles, they are responsible, on average, for managing very high annual fuel bills – £23 m in the private sector and £12 m in the public.

Conversely, there were a large number of delegates with a highly unbalanced profile but, typically, they work in organisations with smaller fuel bills – £5 m in the private sector and £2 m in the public.

However, there are organisations, in both public and private sectors, with fairly high fuel bills of about £7 m a year whose energy management is at risk because they are performing badly in one particular area – shown by the trough shape.

In contrast, there are organisations in the public sector, also with fuel bills of around £7 million a year, where effort may be wasted because one area is in advance of the rest – shown by the peak shape.

The bigger an organisation's fuel spend the more likely it is to employ full-time energy staff and, in general, this results in better energy management performance. The average profile drawn was noticeably higher in organisations employing full-time staff to manage energy.

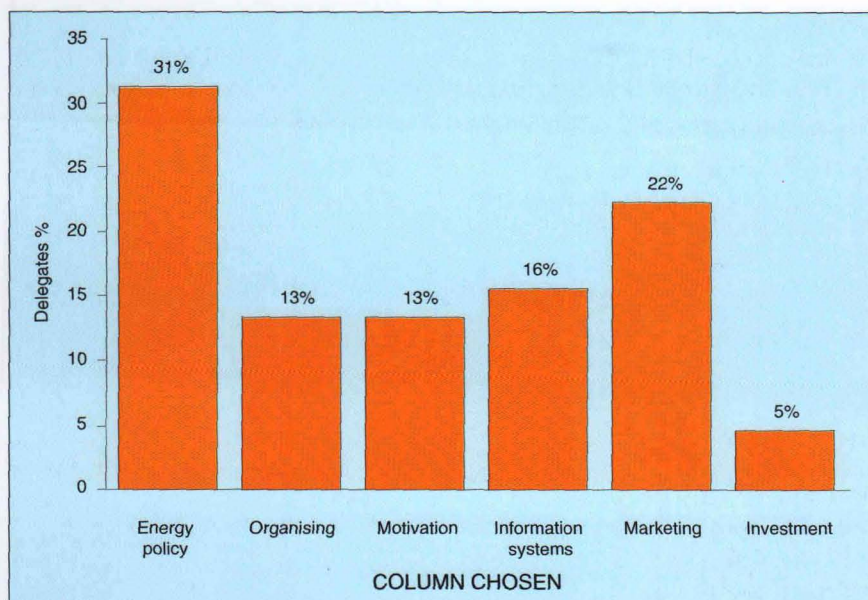


Figure 5

Column of the matrix chosen by delegates as the area to focus attention first. Energy policy was chosen by nearly a third of delegates and Marketing by a fifth

Focus of attention

There was no general agreement among delegates about which organisational aspect of energy management needs their attention first. Two columns of the Matrix, however, were chosen noticeably more than the others, nearly a third of the delegates choosing Energy Policy and about a fifth selecting Marketing.

Again the public and private sectors are similar. Perhaps the most obvious exceptions are Organising and Investment, which were chosen by more delegates from the public sector. Motivation, meanwhile, was a slightly more common selection in the private sector.

The message is that there is no single panacea for bringing about improvements in energy management which would work for everyone. Each 'energy manager' needs to use BRECSU's diagnostic tools to identify the best course of action in their own particular circumstances.

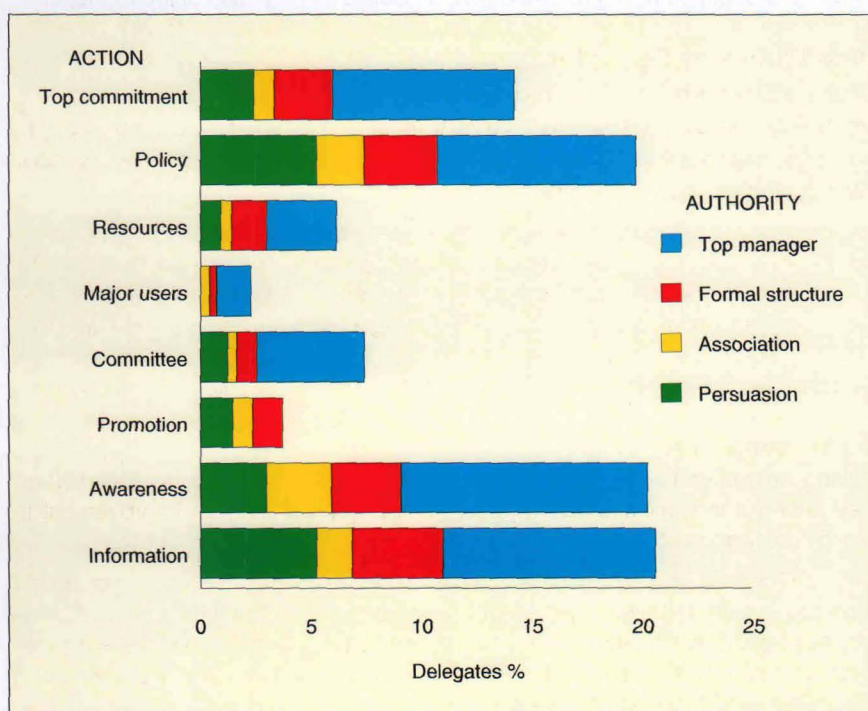


Figure 6

The first action chosen by delegates and the authority they thought they needed to implement this action. Chosen first actions were, in order: improving information systems, raising staff awareness, adopting an energy policy and gaining top management commitment

Action

The first actions chosen by delegates were similar for both the public and private sectors. In both cases, the most frequently chosen actions form two related pairs – top support and policy, and awareness and information.

About 20% of the delegates chose raising awareness and a similar proportion selected improving information. There is an obvious relationship here, since good information and reporting helps to raise awareness among staff and motivates them to save energy.

There is also a relationship between the other pairing, top support and policy. Devising a policy is a good way of gaining top management attention, while top management support may be necessary before you can get a policy accepted and adopted.

Few delegates, in either sector, saw a need to look outside their organisation to make progress. And few of them, again in either sector, see involving the major users of energy within their organisations as necessary to make that advance. This is surprising since significant progress might be made in these two areas.

Authority

Over half the delegates believed top management support was necessary to make effective advances, regardless of the action they thought was required (figure 6).

Few delegates saw themselves as having enough authority or influence to bring about their chosen improvement, and comparatively few chose to advance their cause by using the formal structure of their organisation. This is because energy management is not a core business activity but tends to be a marginalised technical speciality.

One way of overcoming this lack of integration would be to associate energy management with general managers' objectives by building alliances with people in other departments. Few delegates seem comfortable with using the informal authority of association with others to make progress.

Concentrating on top management authority may be a mistake since progress could be made using the three other types of authority – by using the formal structure, by building informal alliances with others, and by using personal influence. Indeed, it might well be a safer strategy to use these other types of authority to begin obtaining results before attracting the attention of top managers.

Obstacles and Opportunities

Delegates saw a wide range of obstacles standing in the way of improving the practice of energy management in the UK. In both the private and public sectors they cited organisational structure, people and resources with similar frequency, with information fairly close behind.

As opportunities for immediate exploitation delegates in both sectors placed most emphasis on promoting their own energy management activities and introducing incentives. A smaller but still significant minority saw improving their own expertise as an opportunity for improving energy management in their organisation. Fewer saw improving their organisation's energy accounting practices as an immediate opportunity which they could exploit.

Implementation

Getting delegates to commit themselves to implementing a chosen action when they returned to work has had a major impact in promoting an improvement in energy management.

Over half the delegates (57%) who replied to the follow-up questionnaire had implemented their chosen action within six months of the workshop, and a further 21% had decided to take some other action to advance energy management. Most of these actions are likely to result in energy savings. Only a very small proportion (9%) failed to achieve anything.

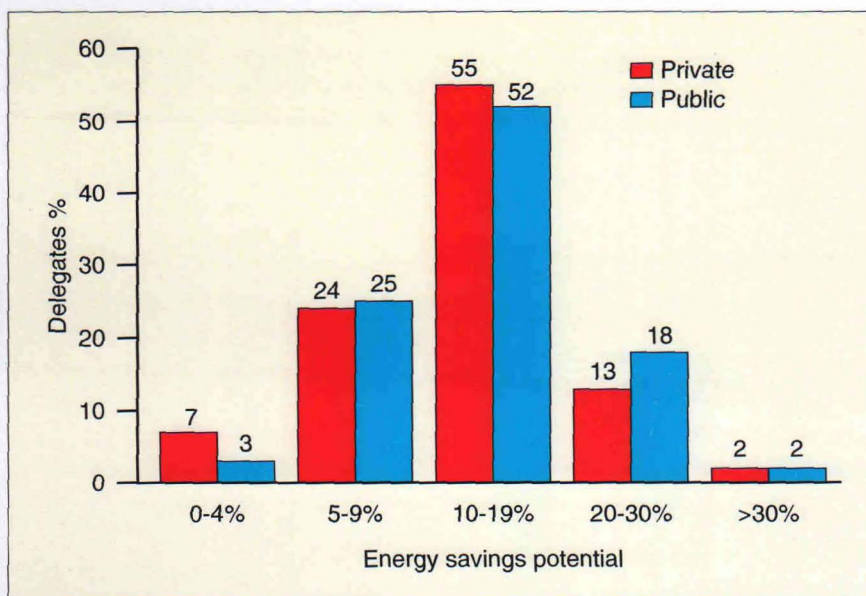


Figure 7

Average energy saving potential by sector.

Delegates were asked what proportion of their annual energy spend could be saved through better energy management. The estimates for different sectors are shown

Forty-three percent of the delegates believe that this action had been successful and a further 51% needed more time for the action to take effect. Very few (6%) had been entirely unsuccessful.

Energy saving potential

Over half the delegates in both the private and public sectors believe that there are realistic low cost savings of 10–20% to be made in their organisations. Twenty per cent of public and 15% of private sector delegates think they could make savings of over 20% (figure 7).

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